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| 09/857,490 | 10/01/2001 | Federick H. Rumpf | 97116CIP-(36 | 5371 |

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| ART UNIT | PAPER NUMBER |
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1754

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Please find below and/or attached an Office communication concerning this application or proceeding.

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|---------------------------|------------------------|--|
| Application No. 857490 | Applicant(s) Rampf | |
| Examiner Hendrickson | Group Art Unit 1154 | |

*U.S. GPO: 2000-472-999/43204

Art Unit: 1754

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothbuhr et al. 4636375.

Rothbuhr teaches in column 8 treating carbon black off-gas to remove water and carbon, then recycling it. While not explicitly teaching heating before recycling, this is suggested in column 9 and thus obvious to increase the carbon yield, and/or efficiency of combustion. The fuel rich mode is suggested as an option in col. 1 and 2.

Claims 1, 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes '402, alone or in view of Rothbuhr.

Stokes teaches in columns 2 and 3 removing carbon and water from carbon black off-gas and recycling. The injection of oxygen is taught. This differs only in not teaching heating the dewatered gas. However, this is deemed to be obvious as a measure to maintain the temperature, in view of maintaining a favorable equilibrium in col. 2 line 12 as well as to maintain a hot combustion zone for efficient burning and carbon formation.

Moreover, Rothbuhr teaches in column 9-10 efficiency gained by preheating the infeeds. Therefore, preheating is an obvious measure to improve economic efficiency. Concerning claim 2, Stokes col. 3 line 50-55 teaches or suggests the fuel rich mode.

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes '402, alone or with Rothbuhr as applied to claims 1, 2 above, and further taken with Sircar and Doshi respectively.

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Stokes teaches removal by adsorption in general- it does not specify PSA. However, Sircar teaches in col. 5 line 55 using PSA to dewater a gas. Thus using it in the process of stokes an obvious expedient to perform the water removal. Concerning claim 8, Stokes does not identify the source of oxygen, however Doshi teaches in column 11 line 5 that it can separate oxygen by PSA. Thus, using oxygen from any source, such as PSA, is an obvious expedient to create the oxygen used by Stokes.

Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes alone or in view of Rothbuhr as applied to claims 1, 2 above, and further in view of Lynum '518.

Stokes/Rothbuhr, supra, does not explicitly teach reheating the recycled gas using plasma heating. However Lynum in column 5 teaches this technique to make carbon black. Plasma preheating the gases of Stokes is thus an obvious expedient to assure efficient combustion and restore heat lost during the water-removal steps.

Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection. *The references are combinable and their relative ages are not relevant.*

Any inquiry concerning this communication should be directed to examiner Hendrickson at telephone number (703) 308-2539.



Stuart Hendrickson
examiner Art Unit 1754